REMARKS

In the Office Action of September 13, 2004, claims 1-25 stand rejected. In this response claims 1, 8, and 16 are amended. Reconsideration and allowance of all pending claims are respectfully requested in view of the following remarks. No new subject matter is being added by this response.

I. DRAWINGS

FIG. 1 and FIG. 2 have been labeled as "prior art" to comply with 37 C.F.R. 1.121(d).

II. SPECIFICATION OBJECTIONS

The Examiner objects to the specification because the Examiner indicates that it is not clear what the term "roll off" means and why the value is negative. Paragraph 5 of the specification clearly indicates that the amount of the attenuation as frequency increases is the roll-off:

> The ability of an isolation system to isolate a payload and attenuate vibrations is described by the transmissibility transfer function. Transmissibility is the ratio of the output vibration over the input vibration (i.e., the vibration of the payload in relation to the vibration of the floor). Transmissibility varies as a function of the input vibration frequency. . . . The amount of the attenuation as the frequency increases is known as the roll-off and is measured in gain per decade of frequency. A decade of frequency is an order of magnitude change in frequency and gain is expressed in decibels (dB).

Therefore, roll-off can be expresses in dB/decade. Since roll-off is a measure of attenuating it is expressed as a negative number. Also, note that FIG. 8 is a graph illustrating a transmissibility curve for an exemplary embodiment of the invention showing an exemplary roll-off. Thus, roll-off measures transmissibility and is expressed as a negative because, in the range of interest, transmissibility is decreasing.

III. REJECTIONS UNDER § 112

Claims 6, 15 and 19 stand rejected under 35 U.S.C. § 112 as failing to be enabled. The Examiner argues that roll-off is not defined. As discussed previously, the meaning of roll-off is clearly explained in the specification. This rejection should be withdrawn.

IV. REJECTION UNDER 35 U.S.C. §103

Claims 1-25 stand rejected under 35 U.S.C. §(a) as unpatentable over *Davis* in view of *Jones*. The Examiner argues that *Davis* discloses a dampener and isolator except for a discussion of effective fluid use and the adjustment of the passages to tune the dampener. The Examiner argues that the tuning of fluid mounts is known and that *Jones* teaches the adjustment of fluid passages to create a fluid inertial effect.

Jones discloses the use of a fluid mass ("slug") to provide a fluid filled engine mount. In the *Jones* invention a compensator means is provided to solve for problems caused by fluid volume changes due to temperature (column 6, lines 55-65). This is accomplished by use of an auxiliary chamber that includes a gas filled section and a liquid filled section. The gas filled section is used to compensate for variations caused by changes in operating temperature. (Column 7, lines 4-16). Indeed, as noted in *Jones* "because the inertia of the fluid in the secondary fluid system is relatively small, and the resistance to fluid flow through the orifice is large, the effect of the secondary fluid system on the overall spring rate is negligible." (Column 7, lines 60-64). Thus, *Jones* teaches away from the addition of extra dampening and isolation and instead compensates for an unrelated problem – variations due to temperature – with a secondary system that provides no additional dampening and isolation.

Therefore, *Jones*, either alone or in combination with *Davis*, fails to disclose, teach or suggest "the ratio of the cross sectional area of the first fluid containment chamber and the second fluid containment chamber to the cross sectional area of the damping path is chosen to produce an effective mass of the fluid to enhance vibration damping and isolation, the effective mass of the fluid greater than the true fluid weight" as in claim 1, amended. Nowhere in *Jones* is discussed use of an effective fluid mass that is greater than the true fluid mass to provide isolation and damping.

Further *Jones*, alone or in combination with *Davis* fails to disclose teach or suggest "the cross sectional area of the damping path can be changed to permit active tuning of the effective mass of the fluid: as in claim 2, "the cross sectional area of the first fluid containment chamber or the second fluid containment chamber can be varied to permit active tuning of the effective mass of the fluid" as in claim 3, "the true mass of the fluid is less than the mass of the payload and the effective mass of the fluid is greater than or equal to the mass of the payload" as in claim 5, "the effective fluid mass of the fluid is chosen to give the apparatus a roll-off of –60dB per decade for at least one decade after a significant resonance" as in claim 6 and "the density of the fluid can be changed to change the effective fluid mass" as in claim 7.

Considering claim 8, no where in *Jones*, alone or in combination with *Davis*, is there disclosed, taught or suggested that the mechanical equivalent of the isolator comprises "four tunable parameters and wherein the four tunable parameters comprising a first spring in parallel with a second spring, an effective fluid mass and a first damper in series". Both *Davis* and *Jones* lack four tunable parameters and *Jones* teaches away from providing additional tunable parameters.

Claims 9 through 15, which depend from claim 8, include further limitations that are not found in *Jones* or *Davis*, either alone or in combination.

Considering claim 16, no where in *Jones*, alone or in combination with *Davis*, is there disclosed, taught or suggested that "the ratio of a cross sectional area of the primary isolations means to a cross sectional area of the damping path are chosen to provide a fluid mass effect, the fluid mass effect determined by an effective mass of the fluid, the effective mass of the fluid greater than a true fluid weight".

Claims 17-20, which depend from claim 16, include further limitations that are not found in *Jones* or *Davis*, either alone or in combination.

Considering claim 21, no where in *Jones*, either alone or in combination with *Davis*, is there disclosed, taught or suggested "am isolation and vibration damping system comprising: a platform for securing a payload; and a plurality of isolation struts attached at one end to the platform and at a second end to a base, the mechanical equivalent of each of the plurality of isolation struts comprising four tunable parameters, the four tunable parameters comprising a first spring in parallel with a second spring, an effective fluid mass and a damper in series".

Claims 22-25, which depend from claim 21, include further limitations that are not found in *Jones* or *Davis*, either alone or in combination.

The present invention provides for additional isolation and vibration dampening over prior systems by taking into account and allowing for a fluid mass effect, the fluid mass effect based on an effective mass of the fluid, which is the actual weight of the fluid increased by an amplification factor. This is not disclosed be *Jones* or *Davis*, alone or in combination.

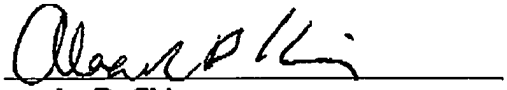
V. CONCLUSION

For the foregoing reasons, the present application is believed to be in condition for allowance and favorable action is respectfully requested. The Examiner is invited to telephone the undersigned at the telephone number listed below if it would in any way advance prosecution of this case.

While no other fees are believed due, the applicant hereby requests that any other required fee to maintain pendency of this case, except for the Issue Fee, be charged to Deposit Account 50-2091.

Respectfully submitted,
INGRASSIA FISHER & LORENZ

Dated: November 30, 2004

By 
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